

Environmental Surface Disinfection in Dialysis Facilities: Notes for Clinical Managers

✓ Select proper disinfectant(s) and determine correct dilution(s) for routine use.

- **Use only Environmental Protection Agency (EPA)-registered hospital disinfectants^a.**
 - EPA-registered hospital disinfectants have label instructions explaining how they should be used in healthcare settings.
 - EPA-registered sodium hypochlorite or other products for healthcare settings are available and are preferred over household bleach products that are not EPA-registered for disinfection of surfaces.
- **Low-level vs. intermediate-level disinfection:**
 - Routine disinfection of environmental surfaces can be accomplished using a low-level disinfectant (any EPA-registered hospital disinfectant). However, intermediate-level disinfectants must be available in the dialysis facility for disinfection of surfaces that are visibly soiled with blood or body fluids.
 - Intermediate-level disinfectants are sufficiently potent to inactivate mycobacteria and have a tuberculocidal label claim, whereas low-level disinfectants are not strong enough to inactivate these bacteria.
 - For convenience, consider selecting and routinely using hospital disinfectants that are tuberculocidal or have label claims of activity against hepatitis B virus (HBV) and human immunodeficiency virus (HIV). These products may be used to perform routine and intermediate-level disinfection.
- **Identify and instruct staff on the correct dilution of the disinfectant agent.**
 - Read the label carefully and follow the manufacturer's label instructions for proper dilution of the disinfectant. Note, label-specified dilutions for EPA-registered sodium hypochlorite (i.e., bleach) products might not necessarily

conform to a 1:100 or 1:10 dilution. The manufacturer's instructions are specific to the product and should be followed. Some products do not require preparation or dilution and are sold as "ready to use."

- Products with tuberculocidal, HBV, and HIV label claims will also have instructions for cleaning blood spills.

✓ Establish procedure for disinfecting dialysis station between patients.

- **Identify responsible staff.**
- **Ensure procedure allows for sufficient disinfectant to be applied to surfaces (surfaces should be visibly wet).**
- **Employ strategies to optimize cleaning and disinfection of the station.**
 - A sufficient patient-free interval is necessary at each station to facilitate adequate cleaning and disinfection. Routine surface disinfection should not commence until the patient has left the station.
 - A facility-wide patient-free interval between treatment shifts should be considered to ensure thorough disinfection of surfaces at the dialysis station and to minimize lapses in infection prevention that can occur when processes are performed in a hurried manner.
 - Routine disinfection of surfaces at the station should occur with *no patient present* to reduce the opportunities for cross-contamination and to avoid exposing patients to disinfectant fumes.
- **Important considerations regarding moving patients to a post-treatment seating area to facilitate more rapid station turnover:**
 - Patients should not be removed from the station until they have completed treatment and are clinically stable. If a patient cannot be moved safely, disinfection of the dialysis station should be delayed until the station can be vacated in a safe manner.

- If patients are moved to a separate seating area prior to removing cannulation needles or while trying to achieve hemostasis, the chairs and armrests in those areas must be disinfected in between patients. Avoid creating new opportunities for contamination of shared surfaces with blood or body fluids.
- **Establish procedure for cleaning and disinfection of priming buckets.**
 - Process should include emptying, cleaning (e.g., if blood is present), disinfection, and air-drying of bucket.
 - Disinfected priming buckets should be dry before reattaching to machine or use.
- **Establish procedure for cleaning and disinfection of reusable supplies.**
- **Disposable medical supplies brought to the dialysis station should be discarded.**
 - CDC recommends discarding these supplies instead of dedicating them to a patient.
 - Discard and dispose of these supplies in accordance with your state's regulated medical waste regulations.
- **For equipment such as computer touchscreens and keyboards, check with the manufacturer for instructions and compatibility of equipment with disinfecting agent.**
- **Determine staff personal protective equipment (PPE) needs based on disinfectant product labels.**

✓ **Ensure staff have been properly trained on:**

- **Dialysis station cleaning/disinfection protocol;**
- **How to prepare the appropriate "use-dilution" of the disinfectant;**
- **Application of sufficient disinfectant to achieve visibly wet surfaces per the product label;**
- **Proper use of PPE (e.g., gloves, gown); and**
- **Management of routine disinfection vs. surfaces with visible soil or blood^b.**

✓ **Ensure that staff have access to proper supplies, which should include:**

- **Leak-proof disposal containers;**
- **Gloves;**
- **Other appropriate PPE based on product label instructions;**
- **Properly diluted EPA-registered hospital disinfectants for routine/intermediate-level disinfection; and**
- **Wipes, cloths, spray bottles and/or buckets.**

Footnotes and Select References:

^a Environmental Protection Agency. (2012, Oct 22). Selected EPA-registered Disinfectants. Retrieved from <http://www.epa.gov/oppad001/chemregindex.htm>.

^b Centers for Disease Control and Prevention. Guidelines for Environmental Infection Control in Health-Care Facilities. MMWR 2004;52(RR10):1-42.

For machines that are equipped with waste-handling option ports, see references below:

- Jochimsen EM, Frenette C, Delorme M, Arduino M, Aguero S, Carson L, Ismail J, Lapierre S, Czyziw E, Tokars JI, Jarvis WR. A cluster of bloodstream infections and pyrogenic reactions among hemodialysis patients traced to dialysis machine waste-handling option units. *Am J Nephrol* 1998; 18 (6): 485-9.
- Wang SA, Levine RB, Carson LA, Arduino MJ, Killar T, Grillo FG, Pearson ML, Jarvis WR. An outbreak of gram-negative bacteremia in hemodialysis patients traced to hemodialysis machine waste drain ports. *Infect Control Hosp Epidemiol* 1999; 20 (11): 746-51.
- CDC. Outbreaks of Gram-Negative Bacterial Bloodstream Infections Traced to Probable Contamination of Hemodialysis Machines -- Canada, 1995 United States, 1997; and Israel, 1997. *MMWR* 1998;47(03);55-5.